KANSAS MEDICAL JOURNAL.

VOL. IX. TOPEKA, KANSAS, SATURDAY, AUGUST 21, 1897. No. 34.

ORIGINAL ARTICLES.

Symphyseotomy.

BY EDW. E. HAZLETT, M.D., ABILENE, KAS.

Read before the Golden Belt Medical Society at Abilene, Kas., July 1, 1897.

The operation of cutting through the symphysis pubis to facilitate delivery when passage of the fetus is impossible, without artificial intervention, is termed "Symphyseotomy." The proceeding is not a new one, having been proposed to the French Academy of Surgery by a student of medicine in Paris in the year 1768. The proposal was received with ridicule, but in 1777 the opportunity offered, and the young physician did his first operation with success and was soon overwhelmed with honors. But, as is almost always the case when a new operation is proposed, a great many surgeons took it up and a great fight ensued between the advocates of Cesarean section and the symphyseotomists. It was soon given up, however, and disappeared from French practice. In Italy symphyseotomy took firm hold from the first and continued to be done with varying results throughout the century. In 1886 Professor Morisani published full details of the results. This was before the advent of antiseptic or aseptic surgery.

Since January, 1886, a revolution has been at work in the statistics of the operation. Stimulated by the favorable and ever increasing better results of the Naples school, Professor Pinard, in 1892, introduced the method for the second time into Paris. Following closely his lead, American surgeons began doing the operation, the first reported instance being that of Prof. Chas. Jewett, in September, 1892, although three unreported cases had been previously operated on. Since this time it has been done so often as to be no longer a rarity. The number of reported cases to September, 1896, being something over 85 for the United States alone, while Zinke and Harris have tabulated over 400 syphyseotomies throughout the world. Having had no personal experience with the operation I have been compelled to rely solely on the literature of the subject, as it has appeared during the past few years in the journals and textbooks, and especially am I indebted to the excellent review of the subject by Prof. Edw. A. Ayres, published in the New York *Polyclinic* for May 15, 1896, and the *Medical Record* for September 12, 1896.

What are the indications for and limits of the operation? By the separation of the pubic bones space is gained in all directions —especially is this true when the limbs are flexed at the knees and thighs.

In the separation of 2½ inches a gain of 3-5 inch in the true conjugate is effected. Caruso has reported cases of separation of 3 3 5 inches without harm, although 2½ to 3 inches is probably the limit of safety. The transverse and oblique diameters, and every line drawn from the promontory to a point on the ileo pectineal line, in front of the transverse diameter increase, according to Garrigues, from ¼ to ½ the distance between the ends of the pubic bones, that is, from ½ to 1½ inches, so that in dealing with a child of normal size we can expect a safe and easy delivery with an antero post terior diameter of 3 inches, and a safe but difficult accouchment when the diameter is reduced to 2½ inches. The upper limits for the operation should be in flat pelves 3½ inches, and for the generally contracted pelvis 4 inches—above which figures version

or instrumental delivery offer the easiest solution of the problem. But to make such diagnoses one must be skilled in pelvimetry, and how few of us have the opportunity of making such examinations, especially in primipara, be we ever so skilled, until summoned to attend the patient in labor, maybe some hours. It is then too late to induce labor. Internal podalic version may deliver if the pelvis be but slightly contracted, but it becomes a much more difficult question to determine that version will deliver than that symphyseotomy will, and if version be undertaken and we fail to deliver, the child is in the most difficult position for symphyseotomy or craniotomy.

Craniotomy is absolutely unjustifiable and should not be undertaken when there is fair reason to believe that a separation of the pubic bones will deliver the child, with the chances three to one of its being born alive. The records of craniotomy tables show a total maternal mortality of 15 per cent. For the child, of course, 100 per cent. But if the operation be done early and before damaging efforts with the forceps, it is a comparatively safe maternal measure. But look at the infant mortality. The same rule applies to symphyseotomy—the general mortality for the latter operation in America, where all but three cases were done during the antiseptic period, is 8 or 9 per cent. Dr. Ayres, in the article above quoted, tabulates 111 cases where operation was done early and before damaging effort with the forceps with total maternal deaths, 6; total number of children born, 112; total children died, 16. Average number of hours in labor, 16. Of the 6 maternal deaths, 1 had septicemia when admitted to hospital; 1 had septic peritonitis (believed to have originated before operation); 1 had phlegmasia and died of pulmonary embolism; 1 died of pneumonia and impacted feces; 1 died of septic peritonitis; and one died over a month after operation from sloughing of a large, old cicatrix of vagina complicated by pneumonia.

This table shows a mortality of 5 per cent., but after summing up the causes of death the writer says: "It is no exaggeration to say that, the essential mortality of symphseotomy is not over 1 per cent., and is but slightly more dangerous than the induction of premature labor, while on the other hand the risk for the child is three times as great by induced labor—75 to 80 per cent., to 20 to 28 per cent. for symphyseotomy."

How does symphyseotomy compare with Cesarean section? The best maternal mortality per cent. ever obtained for the latter by the improved operation and technique of Sanger in 100 sections is 7 per cent. This was in the hospitals of Germany. In the United States and in general practice it is very different. According to Harris the death rate reaches 28 per cent., and it depends largely on the condition of the woman at the time operated on—the promising cases being those of women *not yet in labor* or in it only two or three hours, and where no attempts have been made to deliver through the pelvis.

As to the Poro operation, the maternal mortality in America has been 38 per cent. The infant death rate 22.5 per cent. Hence this operation does not compete with symphyseotomy, but should be reserved for cases of osteo malacia, with pelves in which the antero-posterior diameter falls below 2¾ inches.

There are three methods of doing symphyseotomy. The Italian, or Morisani operation, consists of cutting down through skin and subcutaneous fat at the upper border of the symphysis, having previously paid the usual care to toilet, antisepsis, etc., and having passed a catheter into urethra which, together with the bladder, is drawn to one side and held by an assistant. The index finger of left hand is then passed into the vagina close to (behind) symphysis. A small, curved, narrow-bladed knife is then passed through the incision down between the finger of left hand and the pubis, cutting from the base up and out until with a cracking sound the joint separates. Gauze is then packed in the wound which, with a little pressure, readily controls the hemorrhage. Not to exceed four ounces of blood should be lost in the operation. This is the method generally adopted by American surgeons.

Pinard's operation consists of cutting

down upon the face of the symphysis through all the soft tissues and exposing the joint.

Ayers has modified Morisani's operation by making the initial incision one-half inch below the clitoris, which is first pushed well up to the patient's left, thus avoiding division of the vessels to that organ. He then passes a probe-pointed knife with 1¼ inch cutting edge close along the anterior face of the joint beneath the soft parts and cuts down and backward until he feels with left index finger in vagina the bones separate. As in Morisani's operation gauze is packed in wound and delivery proceeded with.

Whatever operation is performed there is one point that should always be remembered —secure full dilatation of cervix, if possible, before cutting symphysis; then, unless pains be strong and the woman not long in labor, deliver with forceps, refraining from abdominal or supra-pubic pressure, aiming to deliver the head through the cervix without forcing it below the pubis. Irrigate vagina, pack with gauze and apply vulvar dressing after stitching primary incision. Apply three 2-inch strips of adhesive plaster, passing them from behind the trochanters across over mons to opposite side. Wiring of joint has been long since found unnecessary.

The real danger of symphyseotomy lies in danger to the parturient canal after pubic section. Laceration of the vagina is probably the most common and most serious accident. This can be avoided by securing the fullest dilatation before pubic separation and by using only a modicum of force in handling the forceps, which should always be so manipulated as to secure anterior rotation of the occiput as there is a distinct tendency for the head to remain in the transverse position. To allow the natural forces to deliver unless it can be promptly done is not safe nor aseptic surgery.

The examination of the symphysis at an average of 16½ months after operation by 44 American surgeons representing 72 symphyseotomies, showed that without exception perfect or satisfactory union had taken place, and in no case was there any persisting effect on locomotion, although during the first few weeks or, in rare instances, several months, there may be and generally is varying amounts of motion. Dr. Jewett has demonstrated that a certain amount of "play" takes place following normal labor. Among the cases reported by American surgeons the operation has been performed for the second time on four patients. In three instances the first operation had no evident effect on second, while in one subsequent labors were aided by the proceeding, the joint loosening.

In closing, I desire to call your attention again to the comparative relations of symphyseotomy to other obstetric operations. I quote from Dr. Garrigues paper before the Pan-American Medical Congress of 1893, as follows: Craniotomy on the living child, or what is still worse, expectation till the child is dead followed by craniotomy, ought never be thought of in any community where it is possible to obtain the assistance of a man able to perform symphyseotomy.

Induction of premature labor is accompanied by only one-half the maternal mortality of symphyseotomy, but there is never less than 43 per cent. infant mortality, that is a combined mortality of 24 per cent., while in symphyseotomy the combined mortality is only 16 per cent. Cesarean section has a combined mortality of 16 per cent., the same as symphyseotomy, and an infant mortality only two-thirds as great as symphyseotomy, but the maternal mortality is three times as large, 28 to 9.

Symphyseotomy has been performed successfully on women many days in labor, whereas Poro's operation under such circumstances is almost always fatal. Any form of Cesarean operation ought therefore be confined to the rare cases beyond the limits of symphyseotomy. Even difficult forceps and version operations ought to be replaced by symphyseotomy since these operations, when the true conjugate is less than 3¼ inches, entail much greater mortality for both mother and child and the latter, even if it survive, is apt to become epileptic or idiotic.

In my opinion symphyseotomy is a valuable addition to obstetrical resources and ought to be performed frequently in maternities and in private practice.

Intestinal Secretion.

BY BYRON ROBISON, B.S., M.D., CHICAGO, ILL.

Gastro-intestinal secretions is a significant and important matter in animal life. Gastro-intestinal secretions are under the control of the sympathetic ganglia located in the walls of the digestive tract. We designate these ganglia in general as the Billroth-Meissner plexus situated immediately beneath the gastro-intestinal mucosa. They rule secretions. We cannot properly separate those submucous nerve plexus from the Auerbach's plexus which rules muscular motion, and is situated between the circular and longitudinal muscles of the gastro-intestinal tract. One nerve plexus is a complement of the other. As secretion without motion is of little avail, and motion without secretion is equally futile, peristaltic motion is necessary to sweep onward the food to be attacked by fresh glandular secretion, and to elminate and drain the system from the debris of food. The remnants of the gastro-intestinal feast must be removed by peristaltic movements.

Besides, secretion is doubtless enhanced by muscular contractions. The large degree of independence exercised by the sympathetic ganglia, especially at a long distance from the cerebro-spinal center, is quite suggestive that there will be local as well as general gastro-intestinal mucosa secretion. From the very construction and function of the digestive tract we may expect local labors in it. At several localities new and different secretions are added to the onward moving food, so that local and general digestion and secretion must occur. I repeat the secretion and digestion is both local and general in regard to the digestive tube. Yet the whole nerve apparatus of the digestive tract is a delicately balanced matter both as regards muscular and secretory activity. Let us call up matters that daily occur, but are not always interpreted. For example, a person eats some cucumbers or other indigestible and fermentable substance. At the time the indigestible substance is eaten the bowels may be as regular as clock work, and the fæces of semi-liquid character. Ten hours after eating the indigestible substance when the regular stool is to be evacuated, it will be observed that, 1st, the stool is delayed, the desire for stool is checked; 2nd, if forced evacuation be exercised the stool will be hard and relatively dry for want of secretion, is manifest by distinctly formed and shaped fæces.

Now what is the cause of this disturbance? The cause is unbalanced secretion due to reflex irritation. The irritation is going on in the business portion of the digestive tract, *i.e.*, in the small intestines. The subject is conscious of this disturbance only by a little pain, colic and excessive peristalsis. He, however, notices that an excess of gasses is being formed and passed per rectum. He may not sleep well, but recognizes an indefinable restlessness. This irritation may be active enough to produce seminal emission during sleep. The irritation in the small intestines has unbalanced the secretion so that it is called away from the large intestine, causing excessive secretion in the small intestine, and hence the dry-formed fæces in the large. It is very likely that the excessive, deficient or disproportionate secretions may occur in separate localities of the digestive tract, just as peristalsis of the tract may be a local matter. We know from experiment the peristalsis may arise, continue and subside within a short piece of gut.

This view of local disturbances in both peristalsis and secretion send its reflex power in disturbing the whole digestive tract is in accord with pathological data. For example, a perforation of the appendix may so unbalance the nerve apparatus as to feel it at the umbilicus. It may be referred pain, but the feeling of the pain in the umbilical region is a reality. The secretion of the gastro-intestinal mucosa is entirely beyond the control of the will. In secretions we are especially dealing with the sympathetic nerve, for secretions have a close relation to the lumen of blood vessels.

1. All glands receive vessels.

2. All vessels have nerves to control their caliber.

The gastric secretion may be reviewed in regard to experimental data. The stomach is supplied with nerves for its muscles and for its glands, as motion and secretion are both necessary for normal digestion. The arrangement of the Auerbach and Billroth-Meissner plexuses is similar to the small intestines. The splanchnic nerve is the chief vaso-motor nerve, *i.e.*, vaso-dilatation and vaso-constrictor. This is important, for secretion in general depends on the blood supply, as may be observed in lactation in the season of "rut," in glandular congestion. But the gastric glands are ruled by the sympathetic nerves whose chief origin exists in the abdominal brain.

It must be claimed, however, that the stomach glands can act independently from spmpathetic influence alone and also be changed, modified by the cerebro-spinal. It is doubtless true that there are not only vaso-motor nerves in the spinal cord, but that the abdominal brain is a great vaso-motor center in that the abdominal brain regulates the amount of blood to the gastric glands, and consequently the amount, and to a certain degree the kind of secretion of the stomach. Yet there must be secretory nerves in the stomach that belongs to the sympathetic. Candor requires the statement that the full knowledge of the nerve supply of the gastric glands is not fully known.

The independence of the sympathetic ganglia of the stomach is signified by the fact that the chief stimulus to the gastric secretion is food in the stomach. It is asserted by some that stimulating any of the nerves going to the stomach does not influence the secretion, for it is found out that the secretion will go on under the stimulus of food when all the stomachic nerves are severed. It is claimed, therefore, that the sympthetic ganglia in the stomach walls are sufficient to act as centers for secretion. This delegates large and significant powers to the sympathetic ganglia.

The sympathetic ganglia are especially liable to reflex irritation, and nowhere is it more manifest than in the stomach. The gastric secretion is modified by reflex stimuli from the brain, uterus, kidney, testicle, ovary, heart and spinal cord, etc. Emotions play a role in gastric secretion.

The successful treatment of stomachic disease is significant in methods of stimulating the stomach, as irritating its muscular walls, which not only starts secretions, but motion as well. In ordinary stomach diseases there are four factors, viz: (a) excessive secretion; (b) deficient secretion; (c) disproportionate secretion, and (d) muscular motion.

Washing out the stomach, irritating its walls with instruments or coarse food will accomplish much in inducing normal secretion. Doubtless this is the benefit of nux vomica and hot water. The clinging germs should be washed from the dormant stomach wall, and the muscular movement must be stirred up to irritate natural secretions. It has absolutely astonished me at the frequent beneficial results of irrigation of the stomach. It stirs to more normal rhythm the sympathetic ganglia, both of secretion and motion. Besides it washes from the stomach wall abnormal matter. The stomach must have rest and repose or it cannot long stand irregular irritation without resentment of the little circulating insults. Hence, the distal irritation from a diseased uterus, tubes and ovaries sooner or later unbalances stomach function from its irregular passages of the traumatic insults to the abdominal brain where reorganization occurs, perhaps with multiplication of effects. The irritation of the diseased genitals has no season of rest, no day or night repose, but at any or all times it rushes and flashes, now tumultuous or turbulent, now pell mell and explosive. There is nothing like a chronic metritic uterus to derange, unbalance the gastric secretion and motion.

The stomach is very highly supplied with blood vessels and nerves because it is a vast and complicated laboratory requiring much energy to hold its delicate but active processes in the balance order. From experimental data we may view the stomachic glands as under the control of the sympathetic nerves, *i.e.*, the ganglia in it.

Kansas Medical Journal.

PUBLISHED WEEKLY

BY THE UNION PUBLISHING COMPANY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per annum, in advance..... $1 00
Single copies..... 15 cents

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers by forwarding in Registered Letter. Address

UNION PUBLISHING CO.,
TOPEKA, KAS.

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Topeka, Kansas, Saturday, Aug. 21, 1897.

THE Osteopaths seem to be having war among themselves. The developments at Kansas City are the result of the efforts of one of the members of the school at Marysville. Whether prompted by jealousy or not we are unable to say, but at any rate he succeeded in exposing the methods of the "National School of Osteopathy," and the State Board will have an opportunity to demonstrate their usefulness. It seems that the self-constituted detective from the Still school applied for and received a diploma on short notice. He claims he was not required to take any course whatever, and that he received in addition to the diploma a certificate to the effect that he had taken a four years' course of study. For this he paid $150. That the fight is between two institutions of the same class does not detract from the interest of the profession or the interest of the board of health. It is time all diploma mills should be investigated and if possible prevented from doing further business. The courts as a rule are not in sympathy with the efforts of the profession to elevate the standard of requirements and it is very doubtful if much can be done.

A NEW college has been organized in Kansas City under the name, "The Kansas City College of Medicine and Surgery." Among those connected with the school we notice a number of prominent Kansas men.

DR. M. B. WARD will occupy the chair of gynecology and principles of surgery in the College of Medicine and Surgery, Kansas City, Kas.

DR. J. C. McCLINTOCK, who has been spending a few weeks among the New York clinics, is expected to return next week.

DR. S. A. JOHNSON, of Topeka, will fill the position of demonstrator for the Kansas Medical College the coming session.

DR. C. J. TUCKER, of Meriden, Kansas, has arranged to locate in Holton, Kansas.

Sunstroke.

Medical Review of Reviews.

A. Lambert, M.D., read a paper on this subject before the New York Academy of Medicine, May 20, 1897, in which he said:

"The week ending August 15, 1896, will long be remembered in this city, because of the excessively hot weather. The total number of deaths for that week was 1,810, the largest number in any week since the establishment of the Bureau of Vital Statistics. Among these, 648 were attributed to sunstroke.

"From the records of the Meteorological Observatory in Central Park, I find that the

mean humidity was 73.18, saturation being represented by 100. From August 4 to 13, the hourly humidity was more often below than above this figure.

"The high temperature was the main factor in the production of so many heat prostrations. It ranged in the Observatory from 72° to 98° F., and for five consecutive periods of twenty-four hours it varied between 80° and 98° F., the mean temperature being 86.7°, or 10.6° higher than the monthly mean temperature.

"These figures are lower than the actual temperature in the streets of the city. During the working hours I find from the same records that the temperature in the sun averaged 119° F. After sunset it fell but little below 90° F. until nearly midnight. The prevailing winds were land breezes, and as their velocity was only about six miles an hour they were scarcely perceptible.

"Excesses of any kind predispose to sunstroke.

"Clinically, the cases fall into three classes:

"1. Heat prostration.

"2. The asphyxial or milder form.

"3. The hyperpyrexial or severe form.

"There were 247 cases of the first kind, all of whom retained consciousness and recovered. Among the 38 patients in the second class, some had lost consciousness for a time, but none had a temperature over 105° F. All recovered. This form is by far the least common. In the third class there were 520 cases, with 132 deaths.

"It was found that direct exposure to the sun was not necessary, although there had been exposure in the majority of the cases. Most of the sunstrokes occurred between 2 and 5 p.m. The prodromal symptoms were usually: severe headache, dizziness and pain in the back. In only a few cases did perspiration cease.

"On admission into hospital the patients were often unconscious and extremely prostrated. Some showed distinct jaundice in the sclerotic. In a few cases the temperature was subnormal, but in the others it ranged between 99.2 and 104.8° F. The pulse varied from normal to 40, the frequency seeming to depend, not on the temperature, but on the nervous shock. As a rule, the pulse ranged between 84 and 96, and the respirations between 24 and 38.

"The prodromal symptoms in the severe cases of the third class were usually present for several days previously, and consisted of physical weakness, anorexia, great irritability and restlessness, and insomnia. Although apparently unconscious, these patients were often capable of performing complex acts for a considerable time. In these severe cases the pulse was rapid and feeble. The quality of the pulse was the best indication of the patient's condition. The pulse-rate bore no relation to the temperature. In many cases there was a petechial eruption associated with a peculiar and disagreeable odor.

"During the bath, or within an hour afterward, about half of the patients became conscious, and remained so. Many patients did not regain consciousness until the next day, one not for ten days, although he ultimately recovered. Patients having convulsions on admission usually continued to have them in the bath. A marked rapidity of the muscles without convulsions was not uncommon.

"In the majority of the patients, after the first reduction of temperature, there were secondary elevations of temperature. In most cases active measures for reducing temperature were necessary three times within the first twenty-four hours. When the temperature fell the pulse showed improvement in such patients as recovered, but it returned to normal more slowly than the temperature. The blood showed decided leucocytosis, and the leucocytes contained pigment. Subsequent anæmia was very marked in nearly all of the patients. Some had bloody expectoration in the bath and for a time afterward.

"The fatal complications were: meningitis, pneumonia and acute exacerbations of chronic kidney disease. The cause of death in most cases was failure of either the respiratory or the cardiac centre; most commonly, the two centres seemed to fail sim-

ultaneously. Three patients suffered from delusional insanity, and two of these recovered within a few weeks.

"Of the cases of sunstroke treated at Bellevue Hospital, 73 were traced and examined nine months afterward. In 42 there were no sequelæ; 3 had become insane since the sunstroke; in 13, dizziness and sensitiveness to heat were noted; in 5, there were severe headaches.

"Dryness and hardness of the skin was noted in a number of the cases; indeed, it was very common within a few days in the hyperpyrexial cases. These patients exhibited a great tendency to the development of ecchymoses, as, for instance, from slight contusions, or from hypodermic injections.

"The treatment consisted in milder cases in giving a bath or phenacetin. In cases of asphyxia, the patients were given a tub or sponge bath. When the ice bath was given for ten minutes, irrespective of the temperature reduction, the mortality was 40 per cent.; when the baths were begun at 90 to 100° F., and reduced to 72° in fifteen or twenty minutes, the results were not as favorable; when the needle spray was used in conjunction with water coming from the cold water faucet (a temperature of about 75° F.), the mortality was 11.5 per cent.; when the cold baths were followed by hot packs, it was 9.5 per cent. The mortality varied between 25 and 38 per cent. in the hyperpyrexial cases considered in this paper.

"The temperature of the ice bath is about 40° F. The patient should not be lowered into the bath while the ice is in, as some, when coming in contact with the ice at first, suddenly became rigid, ceased to breathe, and could not be resuscitated. Continuous and vigorous rubbing should be applied to all parts of the body while in the bath. The temperature should be taken every two or three minutes, and, when it falls to 103° or 104°, the patient should be removed from the bath, rubbed down and allowed to rest. Ice packs were applied by placing the patient on a rubber sheet, and packing ice around him. This treatment is not as stimulating as the cold bath, and the temperature is very slowly reduced.

"Drugs did not seem to act in their usual doses or produce any marked effect until the temperature had fallen to 103° or 104° F. Trional served a good purpose, in many cases quieting the nervous excitement, and even in large doses it gave rise to no bad symptoms. In some cases of sudden collapse, or cessation of respiration, much good seemed to follow the dropping of amyl nitrite into the nose.

"The best treatment therefore, seems to be the use of the needle spray, or ice bath, until the temperature falls to 103° or 104° F., followed immediately by a hot pack, stimulants or sedatives as may be deemed necessary.

"According to the pathological studies of Dr. Ira Van Gieson, patients suffering from sunstroke show acute parenchymatous degeneration of the neurones of the whole neura, axis. Sunstroke, in his opinion, is a species of auto-intoxication. It is evident that the cause of death in many cases of sunstroke is not the high temperature, for death occurred in some cases in which the temperature ranged between 103° and 105° F., for only a few hours. In the Presbyterian Hospital, one patient had a temperature of 115° F., and yet recovered. I am inclined to think that the theory of sunstroke, best suited to our present knowledge, is that it is due to auto-intoxication, with heat as a contributing cause."

Feeding in Diphtheria.

The St. Louis Clinic.

Dr. Louis Fisher, in the *Medical Record*, says: I make quite a distinction in feeding with and feeding without intubation. My success is greatest and my complications are fewest when I have those children that are intubated fed per rectum only. The so-called Schyluck pneumonia is, in most instances, really only a mechanical pneumonia, due to fluids entering the trachea and alveoli through the tube while *in situ* during intubation, and the question of leaving the tube in the larynx is to-day not to be considered as formerly or in the pre-anti-

toxin days. I rarely find it necessary to leave the tube in the larynx more than from three to five days, and during this time we can safely use the rectum for absorption. It is important to remember that the rectum merely absorbs and does not digest. Hence, we must peptonize food. On the other hand, if we are not dealing with an inutubated case, we can safely feed per mouth. I use concentrated foods, some of which are beef, veal and chicken broths, chicken jelly, clam or oyster soup, expressed beefsteak juice, yolk of egg with milk and brandy or whisky if indicated. I feed every two or three hours, using small quantities—one, two or three ounces at a time.

Nasal Feeding—In obstinate children we frequently have great difficulty in feeding per mouth, and rather than exhaust a child by using force, and knowing that we must sustain life, it is frequently advisable to feed through the nose in the following manner: Lay the child flat on its back, and have the nurse hold its arms and head; pass a small rubber catheter, well lubricated (I use glycerine for this purpose), into the nose, and by pushing it we can easily enter the pharynx, œsophagus and stomach. I attach a glass funnel to a piece of rubber tubing, such as we ordinarily use for lavage, and, having entered the stomach, allow the peptonized milk, which has previously been prepared and put into the funnel, slowly to enter the stomach. Nasal feeding I have used only when the rectum showed irritation from rectal feeding, giving symptoms of tenesmus, etc., and when I wished to give the parts rest. It is distinctly understood that I do not advise nasal feeding in nasal diphtheria.

If a cathartic is called for, I give either calomel or, if the child is old enough, a few tablespoonfuls of liquor of citrate of magnesium, or a few spoonfuls of Villacabras water. Locally, ice-cold cloths or an ice cold collar are exceedingly valuable. I do not use sprays or gargles of any kind, as a thorough nasal irrigation suffices to gargle the vault of the pharynx.

While describing medicinal treatment and orrhotheraphy, it is, I believe, proper to mention mechanical treatment; but this is most urgently called for in laryngeal stenosis, and it is hardly in the province of this paper to give the details of intubation, the uses of which are so well understood by most of us.

On the Iodine Test for Semen.

American Medico-Surgical Bulletin.

Dr. Wyatt Johnston (*Boston Medical and Surgical Journal*) attaches great significance to the above-mentioned test, first suggested by Dr. Florence, of Lyons. When a drop of the liquid obtained by moistening a seminal stain is placed alongside a drop of Florence's reagent:

Iodine of potassium, 1.65 gme.
Iodine, 2.54 gme.
Distilled water, 30 c.c.

on a glass slide or watch-glass, so that the edges of the drops come in contact, there appear almost immediately large numbers of peculiar, brownish red, pointed crystals. These are rhomboidal, and resemble so closely in form, size and color the hemin crystals that they could readily be mistaken for them, though a careful examination shows points of difference. The crystals are sparingly soluble in cold and very soluble in warm water, reappearing again on cooling. They are readily soluble in ether, alcohol, acids, fixed alkalies and iodide of potassium; they resist solution in very weak ammonia solutions. On exposure to the air, they gradually disappear, but reappear on adding a fresh quantity of the reagent. Dried stains usually give the reaction in a manner fully as prompt and typical as fresh semen. The nature of the substance which occasions the reaction has not yet been thoroughly established. According to Dr. Florence, it is due to a distinct substance which he terms viviespermine.

By using a larger quantity of material, the reaction can be obtained in the test-tube, an abundant red or chocolate brown deposit of crystals being thrown down. A single fiber teased out of a thread in a piece of cotton stained by semen is sufficient to give a

profuse crop of crystals under the microscope.

The writer has made a number of tests with various secretions of the body, such as blood, urine, sweat, saliva, tears, bile, milk, pus, nasal and vaginal mucus, and has always obtained negative results, or at all events never a characteristic reaction.

The writer is thoroughly convinced of the decided value of the test. More corroborative testimony will, however, be required before its reliability will remain incontestable.

Spurious Constipation.

Joseph Dulberg, M.D., in the Lancet.

I have recently had under treatment three cases of so-called chronic constipation, for which the patients had been in the habit of taking aperients for a long time, and which were cured by forbidding the further use of all kinds of aperients.

The histories of these cases were almost identical. No action of the bowels could be obtained unless aperients were used. No sooner was their use discontinued than constipation set in again, and recourse had to be had to aperients once more. In one of the cases this had been going on for about ten years, and the patient, who came to me for some quite different ailment, was so much addicted to the habit that I had the greatest difficulty in pursuading her to accept my advice. She did so eventually, and the result was so surprisingly satisfactory that she sent me a friend of hers, who curiously enough was also cured of her long-standing constipation by the same "treatment."

The third case was that of a colleague who had always had very regular action of the bowels until he suffered from a sharp attack of diarrhea some months ago, since which he had to use some aperient daily in order to relieve his constipation. He had absolutely no other complaint, and all his organs were perfectly normal. I explained to him that he was in all probability suffering from no constipation at all, but that he was continually expelling by force from his bowel what residum of fæces there was in it, and if he would let nature have her way he would in all likelihood recover his regular habit as soon as his colon contained the requisite amount of residual fæces. My theory turned out quite correct. After waiting impatiently three or four days without taking any aperient, my friend was completely cured of his "constipation;" in fact, he tells me that the motions are at present perfectly natural in size and appearance, just as they were prior to the attack of diarrhea, while they were always more or less watery when produced by aperients.

It would appear from these cases that "spurious constipation" is by no means a rare occurrence, especially after attacks of diarrhea, and that its existence is not as generally known as it should be, although it is mentioned in some text-books. The pretty universal opinion among the public that a daily evacuation of the bowel is an absolute necessity, even when very little food is taken, must be known to every medical man, and it is to the knowledge of this widespread belief that most patent medicine vendors are indebted for the fortunes which they have amassed. This belief is, however, quite erroneous. The daily action of the bowels, like so many other functions, depends very much upon various circumstances—as, for instance, the kind and amount of food consumed, the amount of liquid taken, the amount of exercise, the amount of residual fæces, and above all, the idiosyncrasy of the individual. Bearing in mind these different circumstances, one should not immediately agree with the patient that he is suffering from constipation, to be relieved by aperients, when he complains that the action of his bowels is irregular, but, on the contrary, endeavor to eradicate the erroneous impression from his mind, which is the stepping-stone to hypochondriasis and patent medicine consumption.

The Philadelphia Board of Health is prosecuting a doctor who failed to report a case of scarlet fever.

The Production of Asepsis in Acutely Septic Wounds by the Free Application of Pure Carbolic Acid.

By A. Ernest Maylard, M. B., London, in British Medical Journal.

The following brief extracts of cases show the great potency of pure carbolic, when freely applied, of rendering rapidly aseptic all the parts of an acutely septic wound. In some of these cases the septic process was that of acute traumatic gangrene, and some ounces of pure acid were brushed over the raw and freely exposed surfaces. In each instance in which it was employed improvement set in immediately after the application.

Case 1.—Extensive laceration of foot by railway accident; amputation; traumatic gangrene; free application of pure carbolic acid; cessation of septic process; cure. A. B., aged 35 years, was admitted into the Victoria infirmary in March, 1897. His foot had been badly smashed by a railway accident. The foot was amputated, but the stump became attacked with typical acute traumatic gangrene. The question became one of reamputation or a trial of carbolic acid. The latter method was selected, the whole wound exposed and the acid freely applied. Improvement was noticed the next day. The acid was applied daily for about a week until all smell had disappeared, all inflammation checked and healthy granulations were seen to be springing up. As soon as the stump was quite aseptic sufficient bone was removed to enable proper flaps to be formed.

In this case the man's great pain subsided, and all constitutional symptoms at once disappeared on the first application of the acid. No anesthetic was needed for applying the acid. The result of checking the septic process was to allow more of the limb being saved than would have been possible if reamputation had had to have been performed for the traumatic gangrene.

Case 2.—Extensive tuberculosis of hip-point; acute suppuration; amputation of hip; acute inflammation and sloughing of wound; free application of pure carbolic acid; cessation of septic process; cure. A girl aged 15 years, practically eaten up with tuberculosis and possessing little or no recuperative power, was admitted into the Victoria Infirmary in January, 1897. The hip joint had been excised some weeks previously; a large, acute abscess had formed in front of the thigh. The child's condition became such as to render it advisable to amputate at the hip joint. The anterior flap contained part of the lining wall of the large septic abscess. Transfusion of saline solution was performed immediately after the operation; the pulse and general condition greatly improved. Notwithstanding stuffing and dressing the large wound became actively septic and the girl was very ill. Secondary hemorrhage was feared, for considerable-sized sloughs were separating and the discharge was very fetid. The wound was freely opened up and every part of it copiously swabbed with pure carbolic. The following day showed much improvement both locally and generally. In less than a week the whole septic process was stopped; healthy granulations were seen springing up everywhere, the patient eating and sleeping well, with a normal temperature.

In this case matters looked as bad as they well could, and a nurse was in constant attendance for fear of secondary hemorrhage. In one of the dressings, after the wound had become practically aseptic and was healing rapidly, we discovered a part of the femoral artery with the ligature attached to it, which had almost separated. The artery itself, however, was well covered over with healthy granulations. It is therefore beyond doubt that had we not checked promptly the septic action we should have had secondary hemorrhage.

Case 3.—Extensive laceration of foot; acute traumatic gangrene; free application of pure carbolic acid; immediate cessation of septic process; cure. A boy, aged 2¼ years, was admitted into the Victoria Infirmary suffering from an extensive lacerated wound of the foot, with dislocation of the internal cuneiform. The case was

first seen by my assistant colleague, Dr. Grant Andrew, who replaced the bone, cleansed the wound and dressed antiseptically. In the course of a few days, however, sloughing set in, with acute inflammation and much fetor of the discharge. It was considered necessary to amputate. An attempt, however, was first made with pure carbolic acid freely applied to every part. Marked improvement at once set in, and the boy left the hospital with a serviceable foot.

The satisfactory progress which at once set in in this case after the first application of the acid was very striking. Every effort had been made by a prolonged submersion in antiseptic solutions to render the parts aseptic, but without avail, and amputation was urgent if the inflammation had not been stopped by the acid.

Case 4.—Extensive laceration of forearm and hand; amputation; acute gangrene of stump; free application of pure carbolic acid; immediate cessation of septic process; cure. A man, aged 27, was admitted to the Victoria Infirmary, having received an extensive lacerated wound of the soft part of the forearm and hand. An endeavor was made by carefully cleansing and dressing to save the parts. Amputation had, however, to be performed at the junction of the middle and upper thirds of the forearm. The stump became attacked with acute traumatic gangrene. The flaps were opened out and pure carbolic acid applied freely to every part. The septic process at once ceased, the temperature fell, and in the course of a few days the wound became quite healthy, and a good stump without further operation resulted.

In this case the man, on the morning following that on which the application had been made, told us he had slept well, had been free from pain and felt hungry. His temperature had fallen from 102.8°F. to 99.4°. Nothing could have been more striking than the comparison of the man's condition, both locally and generafly, before and after the application.

I could add other cases to those briefly narrated above to show how powerful is the germicidal effect (for such I believe to be the action) of pure carbolic acid in all kinds of acute septic cases, whether these be of the nature of acute abscesses or acute gangrene, or of septic inflammatory processes connected with malignant disease. There appears to be no pain connected with the application of the acid except so far as is entailed in the mechanical manipulation of the wound and its surfaces. When sloughs exist these should be practically soaked in the acid. On the living tissues the acid appears to have no deleterious effect. If allowed, however, to run over the skin it excoriates and causes pain.

Adherent Prepuce as a Cause of Convulsions in Children.

Pediatrics.

J. Herbert Darey (*Med. News*) said that during the past year he had met with three cases of stupor and convulsions in male children, to which no other cause could be assigned than the presence of a prepuce adherent to the glans penis. All of the patients were promptly relieved by operation. These cases impressed him with the importance of a careful and thorough examination of the prepuce and glans penis in all cases of convulsions occurring in male children, when all other possible causes of reflex irritation have been eliminated.

Case 1.—The patient, aged 2 years, had been under observation for a week or ten days, and during this time had been in a condition of stupor, from which he could not be aroused only with difficulty, and into which he would immediately relapse after having been shaken. His head was normal in size, and no symptoms of brain pressure were present. The pupils were normal, and reacted readily to light. There was no trouble with his dentition. Micturition was very frequent. Anthelmintics and purgatives had been administered with negative results. The foreskin at the meatus was red and irritated, and on passing a probe beneath it adhesions were found between its under surface and the glans.

The prepuce was divided and the adhesions separated, but as the former was not unduly elongated, circumcision was not performed. The wound was dressed with iodoform gauze soaked in carbolized oil, and the patient was put on drop doses of aconite, and his temperature varied from 102 to 104°F. The results were all that could be desired. The wound quickly healed, and in a few days he rallied from his condition of stupor, his temperature dropped to normal, and he has been well ever since.

Case 2.—He was 19 months of age, and had had a great number of convulsions, which had been considered epileptic. The father of the patient had had epileptic convulsions when a child, but had been cured. No cause could be found for the convulsions in our patient except an adherent prepuce. Circumcision had been performed by another physician, but the convulsions continued. His condition was such that he could not be controlled only by the free administration of chloroform. He was put on bromides, and a preparation of passiflora. He gradually improved, and is now strong and healty, and has not had convulsions for some months.

Case 3.—This patient, aged 25 months, was strong and healthy, and of good healthy parentage, there not being a trace of neurotic history in either parent. He had one severe convulsion last summer, which was attributed to an overloading of the stomach and bowels. On January 11, 1896, he was taken with a severe convulsion, which lasted nearly an hour. The same evening his temperature rose to 103°F., and it was only by the constant use of chloroform for a considerable period of time that he was kept from going into other convulsions. He received 2 grains of acetanilid and tincture of aconite in drop doses, every hour, to reduce his temperature; but, in spite of this treatment, his temperature s eadily rose to 105°F. A wet pack speedily reduced his temperature a couple of degrees. It began to rise again rapidly, however, and he was extremely restless and nervous. He was now put in a tub of water at a temperature of 90°F., gradually reducing the bath to 70°F. by the addition of cold water. He was left in the bath until he began to shiver, and goose-flesh was well developed all over his body. He was then taken out, rubbed dry, and rolled up in flannel blankets. His temperature was reduced to 101°F., and he had a sound, refreshing sleep. The next day he was much quieter and free from nervousness, but toward night he became very restless again, and his temperature rose steadily, but not to such a high point as before. The bromides and aconite controlled the condition sufficiently, and it was not necessary to resort to the cold bath. Next day he began to grow worse again and his penis was examined to find any source of irritation there. The prepuce was red and angry-looking, and on inserting a probe adhesions were found. The inner surface of the prepuce was universally adherent to the glans penis, and had to be dissected off, bit by bit. The wound healed nicely, and the patient began to improve rapidly and to gain flesh. He had no return of anything approaching convulsions since.

The Nature of Gonorrheal Inflammation.

American Medico-Surgical Bulletin.

The character of the inflammation set up by the gonococcus was discussed at length in the congress recently held in Frankfort. In the *Centralbl. f. Gynaek.* the results of the discussion are given in an article by Wertheim.

Bumm took the stand that in the vast majority of cases of gonorrhea the affection was one of the mucous membrane; that the gonococcus is purely a parasite of the mucous membrane, and, except under certain conditions, which seldom arise, it does not extend into the other tissues; and that, especially in chronic inflammation, it exists in the superficial epithelium.

Neisser expressed the opinion that a gonorrheal inflammation is essentially an epithelial affection, and it is at least questionable whether gonococci are able to

penetrate into healthy connective tissue. Wertheim claimed that numerous investigators have proved the ability of gonococci to exist in the cutaneous tissues, and that in every case of gonorrhea in a mucous membrane a sufficiently careful investigation will demonstrate their presence in the subepithelial tissue. This fact is so important for the correct understanding of gonorrheal inflammation that it ought never to be lost sight of. It explains the frequent obstinate course of gonorrhea and the frequent failure of treatment. In order to overcome the gonococci, means must be employed whose effects extend to the superficial portion of the subepithelial layer of connective tissue. To do this thoroughly would be to destroy in toto the epithelial layer, and hence the failure of remedies in so many cases.

Certain other ideas formerly held in connection with gonorrhea are now known to be false. We know today, for example, that a gonorrheal infection of pavement epithelium is by no means an impossibility. This has been demonstrated to be true of the vagina as well as of the bladder. We know, further, that gonococci can multiply in the endothelium of the peritoneum as well as in the subendothelial connective tissues. We know that the changes which are so often found in gonorrhea of the tubes or ovaries—the adhesions, the infiltrations of the pelvic organs and cellular tissue, the collections of pus in the tubes and ovaries, etc.—are purely of a gonorrheal nature. We know, further, that there is a gonorrheal metritis. Finally, we recognize that there are undoubted gonorrheal metastases; that the gonococci can penetrate into the capillary vessels at the seat of the primary lesions and set up an arthritis or an endocarditis, or even a myocarditis.

The knowledge of these facts rests on demonstrations of the gonococci, and must be regarded as scientifically exact. There is no reason to suppose that these distant lesions, except in isolated cases, are due to a mixed infection. This supposition rests on the exploded theory that gonococci can neither penetrate into pavement epithelium nor into the peritoneum nor into the deeper layers of the connective tissue.

However, in spite of all these changes in our views of the nature of the gonococcus, Bumm's statement remains true that gonorrhea in the vast majority of cases is an affection of the mucous membrane. It always was that, and that it will always remain; but it is quite another thing to say that the gonococcus is purely a parasite of mucous membrane, and, even if favorable influences are necessary to permit its spread to other tissues, such influences are encountered not so very seldom.

A New Alloy of Copper and Aluminum for Sutures.

Medical Work.

Dr. C. Haegler-Passavant, assistant to Dr. A. Socin, Professor of Clinical Surgery at the Medical faculty of Basle, calls attention to the excellent qualities of wire made of a mixture of 95 parts of copper to 5 of aluminium, which has been used for some time now in the professor's wards.

These wires measure .022 millimetres in diameter, are strong enough to carry a weight of three kilogrammes without breaking, and are very flexible and convenient to handle. They are easily passed into the eye of the needle, tied into knots, and may be used for all kinds of sutures, including continuous sutures.

The irritation produced by them is so insignificant that they may, without inconvenience, be left *in situ* for quite a long time, on condition that they have not been drawn too tight. These aluminium-bronze wires are intended mainly for superficial sutures, being unsuitable for buried sutures, especially in regions with a rich nerve supply, as their stiff ends would be apt to give rise to pain in this situation.

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